

Appl. No. 10/804,758
Amtd. dated April 26, 2007
Reply to Office action of January 26, 2007

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REMARKS/ARGUMENTS

The provisional election made by telephone on January 17, 2007 to prosecute the invention of Group I, claims 1-11, is hereby affirmed without traverse.

Claims 9-11 are hereby amended to correct the informalities noted by the examiner. Claims 1-9 are hereby amended to overcome the rejections under 35 U.S.C. § 112. Claims 1 and 10, the only pending independent claims, have also been amended to more particularly point out and distinctly claim what applicants regard as their invention.

More specifically, claim 1 has been amended to specify that at least one of the antennas has a fixed offset to the ground, and further that a cross-track position error is induced by lateral motion of an antenna as the vehicle moves and is based on the antenna spacing and the tilt angle.

Claim 1 was initially rejected under 35 U.S.C. § 103(a) based on Hrovat et al. U.S. 6,671,587, which shows multiple antennas for determining vehicle heading and computing vehicle position and dynamics, such as roll, pitch, yaw and velocity. Output signals are directed to the vehicle dynamics control devices, such as the suspension and brakes. However, there is no suggestion or motivation to adapt the Hrovat system to compensate for cross-track error induced by tilt, including determining the tilt angle and accordingly adjusting the projected vehicle center to ground. In fact, Hrovat is concerned with locating the center of gravity of the vehicle, e.g., a passenger automobile in the example shown. For purposes of providing navigation for this type of vehicle, the tilt angle can essentially be ignored. Therefore, this reference actually teaches away from the invention of amended claim 1.

Claims 1 and 10 were also initially rejected under 35 U.S.C. § 103(a) based on Parkinson et al., U.S. 6,052,647. Although Parkinson et al. show a steering control 35, there is no disclosure of correcting for cross-track error, nor any suggestion or motivation for calculating cross-track error based on a tilt angle, which in turn is based on a fixed offset distance from at least one antenna to a ground surface. Therefore, these claims are patentably distinguishable from Parkinson et al.

Claim 10 was also initially rejected under 35 U.S.C. § 102 based on Hrovat et al. As discussed above, this reference lacks the claimed feature of using the roll angle and the known height, or fixed offset, to at least one of the antennas.

Therefore, based on foregoing, reconsideration and withdrawal of the rejections of independent claims 1 and 10 are respectfully requested. The examiner is invited to contact the undersigned by telephone if prosecution of this application can be expedited thereby.

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I hereby certify that this paper is being filed by facsimile transmission (571-273-8300) with the U.S. Patent and Trademark Office.

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Mark E. Brown

Mark E. Brown, Reg 30,361

Respectfully Submitted,


Mark E. Brown

Mark E. Brown

Reg. No. 30,361

LAW OFFICE OF MARK BROWN, LLC
4700 Belview, Suite 210
Kansas City, Missouri 64112
Telephone: (816) 268-8950
Attorney for Applicant